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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,119	06/22/2001	Takahiro Ito	Q62668	4996
7590	10/22/2003		EXAMINER	
SUGHRUE, MION, ZINN, MACPEAK & SEAS 2100 Pennsylvania Avenue, N.W. Washington, DC 20037			MAKI, STEVEN D	
			ART UNIT	PAPER NUMBER
			1733	9
DATE MAILED: 10/22/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/886,119	ITO ET AL.	
	Examiner Steven D. Maki	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 31 July 2003.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.
- 4) Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-17 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> | 6) <input type="checkbox"/> Other: _____                                    |

- 1) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 2) Claims 1-6, 9-10, 12-13 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the scope and meaning of "end portions of the sub-groove are formed so that the groove bottom is not inclined from the groove opening" is unclear. For example, it is unclear which direction of inclination is being described. Another example, does this language limit claim 1 to the end portions extending exactly at 90 degrees to the surface side of the block? In claim 1, it is suggested to change "end portions of the sub-groove are formed so that the groove bottom is not inclined from the groove opening" to --a groove bottom of each end portion extends substantially vertically from the outer surface of the block--. Corresponding changes are suggested for claim 16.

As to claims 3-4, 9-10 and 12-13, it is unclear what additional limitation of the tire is being claimed. Claims 3-4, 9-10 and 12-13 describe the intended use of the tire instead of an additional limitation of the tire. The difference in scope between claims 3 and 4 is unclear. The tire of claim 3 can be mounted so as to satisfy claim 4 and the tire of claim 4 can be mounted so as to satisfy claim 3. The difference in scope between claims 9 and 10 is unclear. The tire of claim 9 can be mounted so as to satisfy claim 10 and the tire of claim 10 can be mounted so as to satisfy claim 9. The difference in

scope between claims 12 and 13 is unclear. The tire of claim 12 can be mounted so as to satisfy claim 13 and the tire of claim 13 can be mounted so as to satisfy claim 12.

3) Claims 3-4, 9-10 and 12-13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 3-4, 9-10 and 12-13 describe the intended use of the tire instead of an additional limitation of the tire.

4) The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Incorporation of the subject matter relating to "end portions of the sub-groove are formed so that the groove bottom is not inclined from the groove opening". In view of the 112 second paragraph rejection of claim 1 and the suggestion for overcoming the 112 second paragraph rejection, the following change is suggested: On last line of paragraph 14 (page 3 line 16) of the specification, it is suggested to insert the following: --A groove bottom of each end portion of the sub-groove extends substantially vertically from the outer surface of the block--. The subject matter in this insertion is reasonably conveyed by the original disclosure (i.e. is not new matter) when the original disclosure is read as whole especially since (1) the specification describes the central main portion (but not the end portions) as being inclined with respect to the vertical line V and (2) the central main portions (but not the end portions) are indicated by dotted lines in the developed view of figures 1 and 5 as being inclined with respect to

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the vertical line V. The use of the language "substantially vertically" language to describe the end portion is consistent with the use of "substantially vertically" in the description of prior art figure 8.

5) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Herbelleau et al

7) **Claims 1, 3, 4, 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbelleau et al (US 4298046) in view of Fukuoka (US 5950700) and Japan '914 (JP 11-151914).**

Herbelleau et al discloses a tire having slits (sipes / sub-grooves), which are inclined with respect to the radial direction. The inclination with respect to the radial direction for the slits in the central zone is opposite that of the slits in the lateral zones. Herbelleau et al. does not describe end portions as claimed.

As to claim 1, it would have been obvious to one of ordinary skill in the art to provide the slits of Herbelleau with end portions such that the end portions are "formed so that the groove bottom is not inclined from the groove opening" [a groove bottom of

each end portion extends substantially vertically from the outer surface of the block] in view of Fukuoka and Japan '914's suggestion to use a sipe portion which is inclined with respect to the radial direction and an end portion extending substantially vertically from the tread surface to increase the effective length of the sipe with wear and to control the increase in rigidity of the block which for example degrades steering stability on wet road, braking property on wet road and ride comfort. Fukuoka suggests using a vertically extending end portion in addition to a sipe portion inclined with respect to the radial direction and *from* the sipe opening at the tread surface. Japan '914 suggests using *two* vertically extending end portions in addition to a sipe portion inclined with respect to the radial direction (see example figure 2).

8) **Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbelleau et al (US 4298046) in view of Fukuoka (US 5950700) and Japan '914 (JP 11-151914) as applied above and further in view of Europe '883 (EP 485883).**

As to claims 2 and 5, it would have been obvious to incline Herbelleau et al's slits (sipes) as claimed (e.g. along the short diagonal) since Europe '883 suggests inclining sipes in the opposite direction of transverse grooves (which is equivalent to inclining the sipes in the same direction as the short diagonal a block) so as to optimize the orientation of the sipes and improve for example traction on ice and snow (obtain optimal circumferential wiping and digging action). Claims 2 and 5 fail to exclude a straight sub-groove / sipe. Claims 2 and 5 fail to exclude a block having more than one sub-groove / sipe.

9) **Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herbelleau et al (US 4298046) in view of Fukuoka (US 5950700) and Japan '914 (JP 11-151914) as applied above and further in view of Europe '883 (EP 485883).**

As to claim 7, it would have been obvious to incline Herbelleau et al's slits (sipes) as claimed (e.g. same direction as diagonal / offset from diagonal) since Europe '883 suggests inclining sipes in the opposite direction of transverse grooves (which is equivalent to inclining the sipes in the same direction as the short diagonal a block) so as to optimize the orientation of the sipes improve for example traction on ice and snow (obtain optimal circumferential wiping and digging action. Claim 7 fails to exclude a straight sub-groove / sipe. Claim 7 fails to exclude a block having more than one sub-groove / sipe.

Europe '884

10) **Claims 8-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Europe '884 (EP 485884).**

See block 556 in figure 5. The claimed tire reads on the tire of Europe '884 having blocks 556. Note the sipe closest to the shortest diagonal. This sipe closest to the shortest diagonal is clearly parallel to and offset from the shortest diagonal. Claims 8-14 fail to exclude a straight sub-groove / sipe. Claims 8-14 fail to exclude a block having more than one sub-groove / sipe.

Landers et al

11) **Claims 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landers et al '169 (US 5824169).**

Landers et al '169 discloses a sipe (sub-groove) 17 having an central main portion connected to circumferential grooves using end portions (the resulting sipe 17 of Landers et al '169 has a shape and orientation similar to that of applicant's illustrated sub-groove). The central portion of the sipe 17 is inclined in the same direction as the shorter diagonal of the sipe. Landers et al '169 illustrates a sipe 17 having its central portion offset from the shortest diagonal. See for example the shoulder blocks having two sipes. As to claims 8-14, it would have been obvious to arrange the inclined central portion of sipes 17 of Landers et al '169 as claimed (central main portion, which is arranged substantially in parallel to a diagonal of the blocks, is at a position offset from the diagonal) in view of Landers et al '169's teaching to incline the sipes 17 in a direction opposite that of the lateral grooves to control variation of the direction of principal lug stiffness so that the tire has better lateral stability, handling and wear; it again being noted that in the large shoulder blocks, the inclined portion of one of the two sipes is below the short diagonal. The intended use language relating to the vehicle (claims 9-13) fails to require a tire different from that shown by Landers et al '169. As to claim 11, Landers et al '169 discloses blocks in an inner row and blocks in an outer row.

**12) Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landers et al '169 (US 5824169) as applied above and further in view of Europe '104 (EP 810104) and/or Lurois (US 5896905).**

As to claims 7 and 15, it would have been obvious to one of ordinary skill in the art to incline the sipes of Landers et al '169 as set forth in claims 7 and 15 in view of

(1) Europe '104's suggestion to incline sipes with respect to the radial direction so that the tire has good braking properties on wet ground and good traction properties on snow and ice and /or (2) Lurois's suggestion to incline sipes with respect to the radial direction differently for front tires and rear tires to improve wear.

**13) Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landers et al '169 (US 5824169) as applied above and further in view of Europe '890 (EP 573890) and Landers et al '766 (US 5176766).**

As to claim 17, it would have been obvious to mount front and rear tires of Landers et al '169 on a vehicle as claimed since Europe '890 suggests mounting directional tires on a vehicle such that the directional tread pattern for the front tires are mounted opposite of that for the rear tires and Landers et al '766 teaches mounting a tire having a tread similar to that of Landers et al (each of these tires having an aquachannel) either forward (for improved wet traction) or backward (for superior traction in snow).

#### **Allowable Subject Matter**

**14) Claims 1, 2, 5, 6 and 16 would be allowable if (1) rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and (2) include the orientation of the central portion and end portions shown in figures 1, 5 (the central portion being inclined with respect to the equatorial plane in a direction opposite of the direction of inclination of each of the end portions wherein each end portion connect the central portion to a circumferential groove).**

Although a sipe having a central portion inclined with respect to the equatorial plane in a direction opposite that of the direction of the end portions wherein each end portion connects the central portion to a circumferential groove is known per se as shown by Landers et al '169 (US 5824169), there is no motivation in the prior art to further modify Herbelleau et al so as to have the central portion being inclined with respect to the equatorial plane in a direction opposite of the direction of inclination of each of the end portions wherein each end portion connects the central portion to a circumferential groove.

Remarks

- 15) Applicant's arguments filed 7-31-03 have been fully considered but they are not persuasive.

Claims 1-6 and 16

As to applicant's arguments regarding Herbelleau (slit is inclined with respect to the radial direction along the entire length of the slit), note the newly applied Fukuoka and Japan '914, which show slits wherein the slit is not inclined with respect to the radial direction along the entire length thereof. Although claim 1 has been rejected using Herbelleau, Fukuoka and Japan '914, claim 1 may be amended to overcome this rejection. See above indication of allowable subject matter.

The 102 rejection of claims 1,3, 4, 6 and 7 using Europe '104 has been withdrawn in view of the amendment to claims 1 and 7.

The 103 rejection of claims 1-6 using Landers et al '169 has been withdrawn in view of the amendment to claim 1.

claims 7-15 and 17

The 102 rejection of claims 8-14 using Europe '884 stands since Europe '884 clearly shows a sipe arranged parallel to the shortest diagonal (see the transverse sipe closest to the short diagonal in block 556 in figure 5).

The 102 rejection of claim 7 using Europe '884 has been withdrawn in view of the amendment to claim 7.

As to claim 8, applicant argues that Landers et al '169 does not teach arranging the central main portion of a sub-groove as claimed. Applicant explains that Landers simply teaches that the central main portion of the sub-groove is arranged perpendicular to the length-wise sides of the blocks. Applicant's argument is not persuasive. Landers does not simply teach that the central main portion of the sub-groove is arranged perpendicular to the length-wise sides of the blocks. In contrast, Landers et al teaches inclining the sipes 17 in a direction opposite that of the lateral grooves to control variation of the direction of principal lug stiffness so that the tire has better lateral stability, handling and wear; it being noted that in the large shoulder blocks, the inclined portion of one of the two sipes is below the short diagonal. The inclination of the central portion of the sipe is a result effect variable which one of ordinary skill in the art would readily appreciate should be optimized to obtain the desired results / benefits (better lateral stability, handling and wear). With respect to applicant's argument that Landers et al '169 discloses that sub-grooves are not arranged at a position offset from the diagonal, applicant is incorrect. See shoulder blocks having two sipes in Landers et al '169. With respect to applicant's further explanation that each sub-groove in Landers et

al '169 is not parallel to with the diagonal, claims 8 and 17 fail to require the central main portion to be exactly parallel to the shortest diagonal (claims 8 and 17 describe "substantially parallel" instead of only "parallel").

As to claims 7 and 15, applicant argues that Landers '169 does not disclose that subgrooves (the sipes) have any inclination with respect to the radial direction of the tire. More properly, Landers et al '169 discloses sipes, Europe '104 inclining sipes with respect to the radial direction so that the tire has good braking properties on wet ground and good traction properties on snow and ice and Lurois's suggests inclining sipes with respect to the radial direction differently for front tires and rear tires to improve wear. Europe '104 / Lurois provide ample motivation (e.g. improvement of braking properties on wet ground) to incline Landers et al '169's sipes with respect to the lateral direction.

The 102 rejection using Japan '773 has been withdrawn since Japan '773 does not teach the claimed offset.

16) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is 703-308-2068. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Steven D. Maki  
October 19, 2003

  
STEVEN D. MAKI  
PRIMARY EXAMINER  
GROUP 1300

10-19-03

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